## Syllabus

### Course description

<table>
<thead>
<tr>
<th>Course title</th>
<th>Risk Management and Derivatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>25437</td>
</tr>
<tr>
<td>Scientific sector</td>
<td>SECS-S/06</td>
</tr>
<tr>
<td>Degree</td>
<td>Master in Accounting and Finance</td>
</tr>
<tr>
<td>Semester and academic year</td>
<td>2nd semester 2019/2020</td>
</tr>
<tr>
<td>Year</td>
<td>2</td>
</tr>
<tr>
<td>Credits</td>
<td>6</td>
</tr>
<tr>
<td>Modular</td>
<td>NO</td>
</tr>
</tbody>
</table>

| Total lecturing hours    | 36                             |
| Total lab hours          | -                              |
| Total exercise hours     | -                              |
| Attendance               | suggested, but not required    |
| Prerequisites            | not foreseen                   |

### Specific educational objectives

The purpose of the class is to introduce students to the topic of financial risk management and to the use of financial derivatives in order to hedge risks. Students should be able to identify, measure and manage, especially (but not exclusively) market risks and credit risks. In order to apply the concepts on concrete examples and real data, the software package "R" will be used.

### Lecturer

Alex Weissensteiner  
Office E206  
e-mail: Alex.Weissensteiner@unibz.it  
Tel: 0471/013496  

### Scientific sector of the lecturer

SECS-S/06

### Teaching language

English

### Office hours

please refer to the lecturer’s web page

### Lecturing assistant

Not foreseen

### Teaching assistant

Not foreseen

### Office hours

Not foreseen

### List of topics covered

Students will learn concepts:  
(A) structure and mechanics of OTC and exchange markets  
(B) (coherent) risk measures  
(C) market risk: bond fundamentals, derivatives, introduction to market risk, sources of market risk (interest

1/3
rate risks, equity risks, currency risks, commodity risks),
hedging linear risk (forwards, futures, swaps), nonlinear risk
(options), modeling risk factors, Value-at-Risk (VAR) and
Conditional Value-at-Risk (CVAR or expected shortfall),
VAR mapping, historical and parametric VAR estimation,
back testing, stress testing and scenario analysis.
(D) credit risk: introduction to credit risk, actuarial default
risk (credit rating), default risk from market prices (Merton
model, bonds with embedded prices), credit VaR, expected
and unexpected credit losses, credit derivatives,
(E) liquidity risk
(F) financial disasters and risk management failures will be
discussed.

Learning outcomes

- Knowledge and understanding:
  Knowledge of the major risk sources. Understand
  the principles of how to identify, measure (with
  appropriate models) and hedge (with appropriate
  instruments) financial risks.

- Applying knowledge:
  Ability to measure financial risks and to hedge them
  with financial derivatives. Practical examples will be
  analyzed together in class by using the software
  package "R".

- Making judgments:
  Relevant examples should encourage students to
  express their own judgments in classroom and to
  improve their problem-solving skills.

- Communication skills:
  The applied teaching method (mix of theory and
  applications) should stimulate the participation of
  students in classroom discussions.

- Learning skills:
  The course should provide the necessary
  foundations in financial risk management, such that
  students could either continue their academic career
  in a PhD program or work for the industry.

Assessment

Written exam at the end of the semester. The questions
included in the final exam are aimed at assessing the
acquisition of knowledge and understanding (identify,
measure and manage different risks), and the ability to
apply them to new situations.

Assessment language

English
<table>
<thead>
<tr>
<th>Evaluation criteria and criteria for awarding marks</th>
<th>Assessment based on final exam (100%). Threshold (18 out of 30+ points).</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Selected chapters from CFA Institute Curriculum 2018 edition, Level I –III</td>
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</tbody>
</table>